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CLAIMS

[Claim(s)]

[Claim 1] Fountain equipment using the solar panel characterized by having the solar panel which turns the light-receiving side up and is arranged, the pump driven with the power generated with said solar panel, the nozzle which is connected to the delivery of said pump and spouts water up, and a maintenance means to hold a solar panel at a ***** horizontal in the lower part of the water surface while holding said pump.

[Claim 2] It is fountain equipment using the solar panel according to claim 1 which a filter is attached in the inferior surface of tongue of said solar panel, and is constituted so that said pump may supply the water which passed said filter to a nozzle.

[Claim 3] Said maintenance means is fountain equipment using the solar panel according to claim 1 or 2 constituted with the frame which is arranged in the inferior surface of tongue of a solar panel, and holds this solar panel and a pump, and the float connected with the frame part in the periphery section of a solar panel.

[Claim 4] Fountain equipment using the solar panel according to claim 3 with which a hole is formed in the center of said solar panel, and said pump is arranged at said hole.

[Claim 5] Said solar panel is fountain equipment using the solar panel according to claim 1, 2, 3, or 4 which is an amorphous solar cell panel.

[Claim 6] The purge using the solar panel characterized by having a maintenance means to hold said solar panel at a ***** horizontal in the lower part of the water surface while holding the solar panel which turns the light-receiving side up and is arranged, the filter attached in the inferior surface of tongue of said solar panel, the pump which it drives [pump] with the power generated with said solar panel, and makes said filter pass water, and said pump.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the cross-section front view of fountain equipment.

[Drawing 2] It is the top view of fountain equipment.

[Drawing 3] It is the sectional view of a solar panel.

[Description of Notations]

2 Fountain Equipment

4 Amorphous Solar Cell Panel

6 Pump

8 Nozzle

10 Filter

12 Maintenance Means

14 Frame

16 Float

[Translation done.]

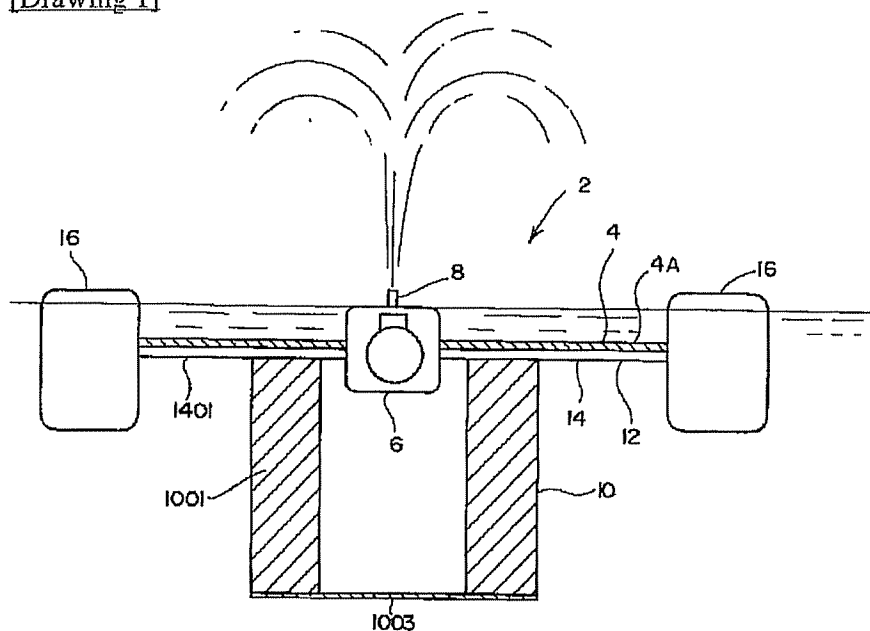
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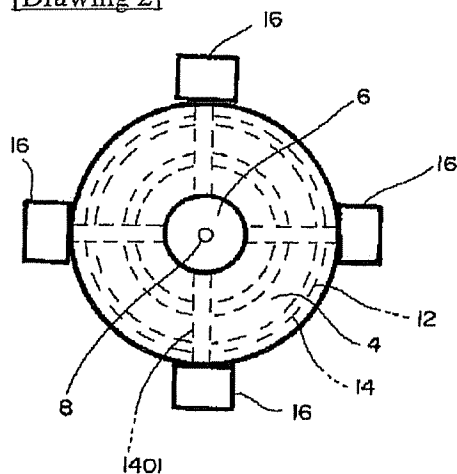
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DRAWINGS

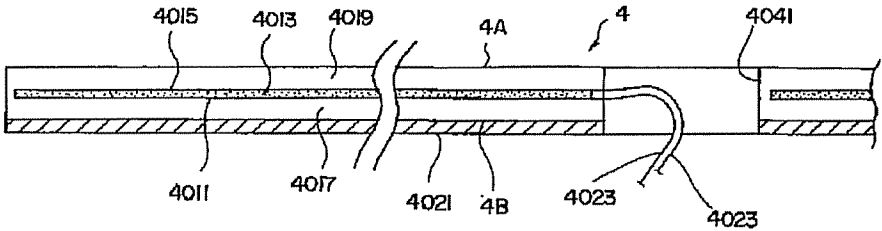
[Drawing 1]



[Drawing 2]



[Drawing 3]



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the fountain equipment and the purge which used the solar panel.

[0002]

[Description of the Prior Art] A solar battery transforms light energy into electrical energy, and the spread of solar batteries has become one of the important technical problems which must tackle positively from a viewpoint which solves global environment problems, such as a global warming issue. And although an energy conversion efficiency is inferior in an amorphous solar cell a little also in a solar battery in recent years compared with the solar battery of crystal system, it is lightweight and suitable for fertilization, and since it is cheap in cost, attention is attracted. If it does not ask whether they are an amorphous solar cell or the solar battery of crystal system but a solar panel is cooled although the skin temperature of a solar panel rises before and after 70 degrees C - 80 degrees C and generating efficiency falls 20% to about 30% in summer etc. when using a solar panel for example, it is known that generating efficiency will become high. On the other hand, what used the solar panel for fountain equipments, such as a pond, is offered.

[0003]

[Problem(s) to be Solved by the Invention] However, with conventional fountain equipment, since a solar panel was arranged above the water surface, there was fault which the skin temperature of a solar panel rises, and generating efficiency falls, and spoils the scene of a pond etc. It is in offering the fountain equipment and the purge using the solar panel which this invention is thought out in view of said situation, and the purpose of this invention can cool a solar panel, and does not spoil a scene.

[0004]

[Means for Solving the Problem] It is characterized by to have the solar panel which the fountain equipment using the solar panel built over this invention in order to attain said purpose turns the light-receiving side up, and is arranged, the pump driven with the power generated with said solar panel, the nozzle which is connected to the delivery of said pump and spouts water up, and a maintenance means hold a solar panel at a ***** horizontal in the lower part of the water surface while holding said pump. Moreover, as for this invention, a filter is attached in the inferior surface of tongue of said solar panel, and said pump is characterized by being constituted so that the water which passed said filter may be supplied to a nozzle. Moreover, this invention is characterized by constituting said maintenance means with the frame which is arranged in the inferior surface of tongue of a solar panel, and holds this solar panel and a pump, and the float connected with the frame part in the periphery section of a solar panel. Moreover, a hole is formed in the center of said solar panel, and this invention is characterized by arranging said pump at said hole. Moreover, this invention is characterized by said solar panel being an amorphous solar cell panel.

[0005] Moreover, the purge using the solar panel concerning this invention is characterized by to have a maintenance means hold said solar panel at a ***** horizontal in the lower part of the water surface

while it holds the solar panel which turns the light-receiving side up and is arranged, the filter attached in the inferior surface of tongue of said solar panel, the pump which it drives [pump] with the power generated with said solar panel, and makes said filter pass water, and said pump.

[0006]

[Function] Since a solar panel is arranged down the water surface and cooled bywater, generating efficiency can be raised. Moreover, since a solar panel is not exposed on the water surface, a scene is not spoiled.

[0007]

[Example] Hereafter, the example of this invention is explained according to an accompanying drawing. In drawing 1, the cross-section front view of fountain equipment and drawing 2 show this top view, and drawing 3 shows the sectional view of a solar panel. Fountain equipment 2 consists of maintenance means 12 to hold a solar panel 4, a pump 6, a nozzle 8, a filter 10, and these solar panels 4, a pump 6, a nozzle 8 and a filter 10. In the example, said solar panel 4 is the amorphous solar cell panel 4, and as shown in drawing 3, it contains the stainless steel substrate 4011. That thickness is 0.125mm and this stainless steel substrate 4011 has also achieved the function as a - electrode. The amorphous silicon layer 4013 is formed on the stainless steel substrate 4011, and this amorphous silicon layer 4013 is formed by the well-known multilayer structure containing P layers required since an amorphous solar cell is constituted, I layers, and N layer. The transparent electrode 4015 was formed on the amorphous silicon layer 4013, and this transparent electrode 4015 has achieved the function as a + electrode.

[0008] On a transparent electrode 4015, coating of the fluorine resin is carried out the bottom of the stainless steel substrate 11, the protection layers 4017 and 4019 are formed, the thickness of these protection layers 4017 and 4019 is 1.0mm, and the protection layer 4019 on a transparent electrode 4015 is formed by the fluorine resin which has light transmission nature. The transparent electrode 4015 and protection layer 4019 side is light-receiving side (front face) 4A of this amorphous solar cell panel 4, and the stainless steel substrate 4011 and protection layer 4017 side is tooth-back 4B of this amorphous solar cell panel 4, and light-receiving side 4A turns upward, and is arranged. The substrate layer 4021 made of synthetic resin is formed in tooth-back 4B of said amorphous solar cell panel 4. The thickness of the part excluding [the amorphous solar cell panel 4] the substrate layer 4021 is 3mm or less. Lead wire 4023 is connected to a transparent electrode 4015 (+ electrode) and the stainless steel substrate 4011 (- electrode), respectively, and these lead wire 4023 is connected to the pump 6.

[0009] said amorphous solar cell panel 4 is formed circularly -- the hole 4041 is both formed in the core. Said maintenance means 12 holds the amorphous solar cell panel 4, where light-receiving side 4A of the amorphous solar cell panel 4 is leveled under the water surface (for example, 1cm - 5cm), and is constituted from the example by the frame 14 arranged in the inferior surface of tongue of the amorphous solar cell panel 4, and the float 16 while it holds a pump 6. Said frame 14 consists of frame members 1401 made of two or more synthetic resin which have been arranged centering on a hole 4041 at the radial, and were connected mutually, and a float 16 is attached in this frame member 1401, and in the periphery section of the amorphous solar cell panel 4, a float 16 sets spacing to a hoop direction, and is arranged in it four.

[0010] Said pump 6 is direct current system, it is supported by said frame 14, and is arranged in said hole 4041, and said nozzle 8 is connected with the delivery of a pump 6. In the example, said filter 10 consists of the annular filter section 1001 which consists of activated carbon, and a board 1003 attached in the end face of the filter section 1001, and it is arranged so that said pump 6 may be located inside a filter 10 on the inferior surface of tongue of the amorphous solar cell panel 4.

[0011] According to this example, if the amorphous solar cell panel 4 receives solar energy at the time of fine weather, a generation of electrical energy is made by the amorphous solar cell panel 4, a pump 6 drives with this generated power, and the pure water which passed the filter 10 will be injected on the water surface from a nozzle 8, and will function as fountain equipment and a purge. And since the amorphous solar cell panel 4 is arranged down the water surface and cooled bywater, although the incidence energy by which incidence is carried out to a light-receiving side decreases a little, the amorphous solar cell panel 4 is maintained before and after the temperature of water, i.e., 20 degrees C,

consequently an energy conversion efficiency is maintained by the good value, and it becomes possible to raise generating efficiency. Moreover, since the amorphous solar cell panel 4 is arranged down the water surface and mechanical components and a member are not exposed to the water surface, fountain equipment 2 can be installed, without spoiling a scene. Moreover, since the part in which the amorphous solar cell panel 4 is formed is hidden in the lower part of the water surface, it can enlarge area of the amorphous solar cell panel 4, and can constitute fountain equipment using the pump 6 of a big capacity. [0012] In addition, although the example explained the case where formed the nozzle 8 and it considered as fountain equipment, in not forming a nozzle 8, it becomes the purge by which water is purified with a filter 10. Moreover, although the example explained the case of an amorphous solar cell panel, this invention is applied similarly [in the case of the solar panel of crystal system]. Moreover, although the example explained the case where floated with the frame 14 and the amorphous solar cell panel 4 and a pump 6 were supported by 16, you may make it support the amorphous solar cell panel 4 and pump 6 grade by the frame installed in the bottom of a pond. Moreover, connect said lead wire 4023 to the accumulation-of-electricity circuit which consists of a component for the antisuckback of a current, a overcharge prevention circuit, a battery, etc., and the power generated by the amorphous solar cell panel 4 is made to store electricity a battery, and only when required, you may make it make a pump 6 drive. [0013]

[Effect of the Invention] The fountain equipment using the solar panel built over this invention so that clearly [in the above explanation] was equipped with the solar panel which turns the light-receiving side up and is arranged, the pump driven with the power generated with said solar panel, the nozzle which is connected to the delivery of said pump and spouts water up, and a maintenance means hold a solar panel at a **** horizontal in the lower part of the water surface while holding said pump. Moreover, the purge using the solar panel concerning this invention was equipped with a maintenance means to hold said solar panel at a **** horizontal in the lower part of the water surface while it held the solar panel which turns the light-receiving side up and is arranged, the filter attached in the inferior surface of tongue of said solar panel, the pump which it drives [pump] with the power generated with said solar panel, and makes said filter pass water, and said pump. Therefore, fountain equipment and the purge which are excellent in generating efficiency and do not spoil a scene can be offered.

[Translation done.]